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Forage Crop Investigations.

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ALFALFA (*Medicago sativa*).

[Instructions adapted to eastern Oregon and eastern Washington.]

The prime requisite in establishing alfalfa in this section is a firm, moist, finely pulverized seed bed.

Alfalfa is an upright, smooth, perennial legume. It is thoroughly established as a forage plant in all of the irrigated portions of the section specified above. It is also proving of value in the semiarid, nonirrigated sections, although much lighter yields are obtained than where the alfalfa is grown under irrigation, but in the absence of more drought-resistant plants it easily takes front rank as a leguminous forage plant. On dry soils alfalfa is slow in becoming established. But little must be expected the first year, and not until the third year are the best results to be looked for. When established, however, it proves so valuable that the extra trouble and expense are fully justified by the returns.

Preparation of the seed bed.—The ground should, if possible, be summer fallowed the season previous, to kill the weeds and store up the necessary moisture to start the young plants. It is often the practice to precede the alfalfa with some intertilled crop, such as corn or potatoes, instead of the summer fallow. Spring seeding is generally practiced, as the fall rains generally come too late to permit fall seeding. In case it is necessary to precede alfalfa with a small-grain crop, the stubble should be plowed as early in the autumn as possible and left unharrowed until early spring, when it should be thoroughly worked and packed.

Sowing the seed.—The seed should be sown broadcast or drilled in at the rate of 10 to 12 pounds per acre and covered about $1\frac{1}{2}$ inches in depth. If the weeds threaten to choke out the young plants, the field should be clipped, with the cutter bar of the mower set high to avoid cutting the alfalfa plants too low. The alfalfa should be clipped high when the basal or crown buds begin to grow into stalks, even though the weeds are not troublesome. There is some evidence to show that under very dry conditions the plants should not be clipped the first season. One cutting of hay may sometimes be obtained toward the end of the first season. Alfalfa should not be pastured until the end of the third season, and then but sparingly if the stand is to be maintained. The alfalfa should be harrowed early the second spring to break the crust and stimulate the plants. It is generally advisable to disk after each cutting. Alfalfa will stand a great deal of harrowing without injury. In this way the weeds are held in check and the moisture is conserved. The disks must be set nearly straight on alfalfa during the second season, but after this they may be set to turn considerable soil without injury to the plants.

Need of experimenting.—In most of the section specified the raising of alfalfa without irrigation is still in the experimental stage. It is frequently the case that failures with this forage crop must be experienced two or three times before its requirements are learned. This loss of time and money can be partially avoided by experimenting on a small scale at first. Select a suitable area and divide it into a number of subdivisions and give each a different treatment as regards preparation of the soil, time, manner, and rate of seeding and treatment of the plants the first two years. In this way the experience which would otherwise require many years can be obtained in much less time. The treatment proving the best can be applied to the increased area the next season.

A rough diagram of the experimental plots should be made when they are laid out. The treatment given each should be carefully recorded and further notes made from time to time as to the success of the different methods of treatment. This will enable one to refer to the work at any future time. The results should be made available to all interested neighbors.

For more detailed information, see Farmers' Bulletin No. 339, entitled "Alfalfa."

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